

REMARKS

In the Office Action, the Examiner has rejected Claims 1 and 3-13 as anticipated by Kapich, or obvious over Kapich in view of Frister or Marzen. Claim 1 has been amended to recite:

"wherein the bladed impeller is formed with a single series of blades, and wherein said single series of blades are configured to both (1) drive the fluid from the fluid inlet to the fluid outlet when the reversible engine/generator is acting as an engine, and (2) be driven by fluid flowing from said fluid inlet to said fluid outlet when the reversible engine/generator is acting as a generator."

This feature is not disclosed or suggested in Kapich. In column 5, lines 49-50 Kapich states that twelve compressor blades (driven by the motor) and eighty-three turbine blades (driven by exhaust gas) are separately provided. Thus, in Kapich, two different series of blades are utilized for the two functions. When working in supercharger modality in the Kapich device the blades 74 of the compressor are driven by the electrical motor, while the blades 79 of the turbine will remain passive and produce a braking action and the valve 25 is throttled to avoid strong pressure losses in duct 29. When working in generator modality in the Kapich device the blades 79 work under action of the air under pressure coming from duct 29, through the open valve 25. The turbine drives the generator and produces electric energy from the pressure energy produced by the turbocompressor driven by the exhaust gases 13-14. Meanwhile the blades 74 of the centrifugal compressor 74 remain passive and produce an unwanted braking action. In column 5, lines 50-52, Kapich even points out that the turbine blades are made small to reduce losses when the device is being driven by the electric motor.

The Kapich device, when working in generator modality, functions only by means of energy supplied indirectly from exhaust gases and drives an additional compressor which in such case dissipates energy and further reduces efficiency.

In certain advantageous embodiments of the invention of Claim 1, the conveyor 7 produces a spiral movement of the whole operating fluid mass and the whole of the single series

of blades 11 is constantly hit by the fluid interacting with all velocity components of the fluid particles (centrifugal, centripetal and axial). In this manner, the making, operating and maintenance of the device are simpler and cheaper. The efficiency is higher because there are smaller internal losses which caused only by the boundary layer and by the roll or ball bearings. Most important, the reaction time of the device is exceptionally short, due to the reduced inertia of the rotating masses which are only one series of blades rotating always in the same direction.

The remaining prior art of record does not cure this deficiency. In Frister and Marzec, a single series of blades is also used for one function only. It is respectfully submitted therefore that Claim 1 and the remaining claims dependent thereon are in condition for allowance.

No Disclaimers or Disavowals

Although the present communication may include alterations to the application or claims, or characterizations of claim scope or referenced art, the Applicants are not conceding in this application that previously pending claims are not patentable over the cited references. Rather, any alterations or characterizations are being made to facilitate expeditious prosecution of this application. The Applicants reserve the right to pursue at a later date any previously pending or other broader or narrower claims that capture any subject matter supported by the present disclosure, including subject matter found to be specifically disclaimed herein or by any prior prosecution. Accordingly, reviewers of this or any parent, child or related prosecution history shall not reasonably infer that the Applicants have made any disclaimers or disavowals of any subject matter supported by the present application.


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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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